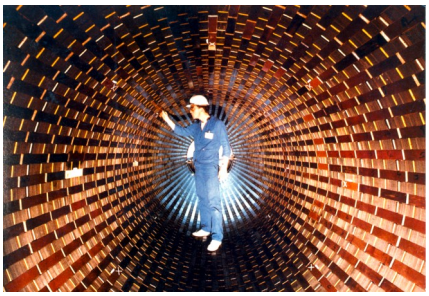
# Peaceful Nuclear Cooperation

U.S. Support for NPT Article IV

## UNITED STATES & JORDAN

Through the International Atomic Energy Agency (IAEA), the United States contributes to the work of many countries using nuclear materials and technology for peaceful purposes. In recent years, U.S. support has focused on achieving tangible and lasting benefits in fields that are vital to human development, including agriculture, human health, water resource management, and human resource development. Since 2000, the IAEA has approved and funded $9,855,713, including $240,565 in 2013, under its Technical Cooperation (TC) program for projects in Jordan.



The United States views its support for the peaceful uses of nuclear energy as a critical part of its efforts to strengthen the IAEA and the global nuclear nonproliferation regime. About 25% of the IAEA's annual budget for peaceful nuclear assistance comes from the U.S. In 2012, the U.S. contributed almost $22 million to the Technical Cooperation Fund and over $6 million in additional funding for training, fellowships, and cost-free experts.

In addition to these longstanding contributions to the IAEA's peaceful uses programs, at the 2010 NPT Review Conference, the U.S. announced a $100 million Initiative to further expand this support over the next five years. The U.S. pledged $50 million towards the IAEA's Peaceful Uses Initiative (PUI), focusing on human health, food security, water resource management, and nuclear power infrastructure development. The U.S. has already allocated over $27 million to specific PUI projects, and welcomes the contributions of Japan, the Republic of Korea, New Zealand, the Czech Republic, Hungary, Sweden, Australia, France, Indonesia, Brazil, Italy, the UK, and Kazakhstan to this important Initiative.

### NUCLEAR ENERGY

An increasing number of Member States are considering nuclear power as part of their electricity generation options, and those Member States need comprehensive and credible information on nuclear power issues such as cost and benefit, energy security and environmental impact to support their decision making. Jordan recently participated in a regional TC project supported by the United States that provided comprehensive information to Member States to support their decision making regarding nuclear power planning and development.

Having considered nuclear energy as a feasible option to reduce dependence on imported oil and gas, Jordan is currently working through a national TC project supported by the United States to develop the nuclear infrastructure needed for the construction and operation of the country's first nuclear power plant. This will be accomplished through capacity building of key organizations.

In recognition of the growing demand for qualified nuclear engineers that will help design, build and operate Jordan's first nuclear power plant, the Jordan University of Science and Engineering has embarked on the establishment of a nuclear engineering department. However, the development of infrastructure, human resources and nuclear knowledge is very difficult without a research reactor, and would greatly reduce the chances of success for any nuclear program.

Therefore, in order to provide top quality education and training in the nuclear field, Jordan is working through a national TC project supported by the United States to develop the technical and safety infrastructures needed for installation of a new research reactor.

### NUCLEAR SAFETY

Radioactive sources are widely employed for beneficial purposes throughout the world, in areas including industry, medicine, and agriculture. However, accidents involving radioactive sources have raised awareness of the safety and security risks created by sources that are outside

1. *Power plant under construction. Credit: Kansai Electric Power Co.*
2. *Standard maintenance check. Credit: Arthus -Bertrand*
3. *2009 IAEA-Argonne international seminar on nuclear security. Credit: Argonne National Laboratory*

effective control. For many years the IAEA has been helping Member States strengthen national management and regulatory infrastructures to ensure that radioactive sources are appropriately regulated at all times. Jordan is currently participating in an interregional TC project sponsored by the United States to strengthen cradle-to-grave control of radioactive sources in the Mediterranean region.

Jordan also recently participated in a regional TC project supported by the United States to strengthen the remaining elements of its national regulatory framework for radiation safety to meet international safety standards as well as to establish a regional network of regulatory authorities to exchange information and share experiences.

## HUMAN RESOURCES

To contribute to Member States' manpower development, the IAEA awards individual fellowships and organizes group training courses. Every year, numerous fellows and training course participants travel to the United States for training in various peaceful uses of nuclear technology and return to their home country to apply the lessons learned.

Since 2000, the United States has hosted several training courses that included Jordanian participants in the fields of nuclear security, insect pest control, research reactors, and integrated management systems and the development of safety culture. Training was also provided through the IAEA Fellowship Program to 17 Jordanians, two of which were sponsored by the United States, in fields such as insect pest control, radioisotope and radiation treatment, research reactors, and nuclear engineering and technology.

Additionally, since 2000, 11 U.S. experts have traveled to Jordan to collaborate through various IAEA Technical Cooperation projects. Examples of some topics include fruit flies, nuclear power, research and training, and quality assurance.

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Through bilateral cooperation, the United States has provided additional support directly to Member States through various collaborative projects including the exchange of information, expert visits, and training of personnel.

In 2009, the U.S. Department of Energy (DOE) provided $43,000 to Jordan for human resource development for nuclear infrastructure.

In 2012, an agreement of understanding between the United States and the Government of the Hashemite Kingdom of Jordan concerning cooperation in nuclear energy and other fields was signed. This will cover technical assistance in best practices in radiation, development of safeguards regulations, new inspection methods, State System of Accounting and Control reporting and information management, and Additional Protocol outreach.

Additionally, since 2000, two Jordanian physicians have been certified in the U.S. through the American Board of Nuclear Medicine.

1. *2003 IAEA-Argonne international seminar on nuclear security. Credit: Argonne National Laboratory*
2. *International radiation measurement exercise. Credit: Dean Calma/IAEA*
3. *International radiation measurement exercise. Credit: Dean Calma/IAEA*
4. *2011 IAEA-Argonne workshop on practical application of the graded approach for the safety of research reactors. Credit: Argonne National Laboratory*